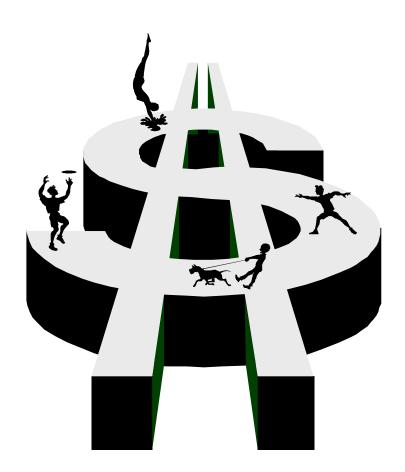
# Nonresident Travel in Montana: Putting the Numbers into Context



Technical Completion Report 98-2 June 1998

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## I. Introduction

The Institute for Tourism and Recreation Research (ITRR) reports several pieces of information about nonresident travel in Montana each year, including: the number of nonresident visitors to the state, expenditures made by these visitors while in Montana, and the economic impact of visitors' spending. These data are based on travel indicators, periodic surveys of nonresident visitors, and economic impact estimates made using an input-output model.

Typically, data regarding nonresident travel in Montana have been reported as "stand-alone" figures. That is, the dollar figures associated with nonresident travel have not been reported in terms of their role in the state's economy. Recently, as Montanans have been engaged in discussions about the changing nature of the state's economy and the role of various industries, the need to better understand nonresident travel's significance has become very clear. This paper is an attempt to add to the understanding of the role of nonresident travel by putting nonresident travel impacts—including jobs, income, and taxes—into the context of Montana's overall economy.

The next section of this report provides a brief description of ITRR's nonresident travel studies. "Methods and Data Sources" contains descriptions of the various pieces of information used to compile figures in this paper and includes background information important to understanding the results found in the remainder of the paper. Next, "Findings" regarding nonresident travel and the state's economy are presented, followed by a "Conclusions" section.

## II. Nonresident Travel in Montana

A nonresident visitor is defined as any person traveling in Montana whose current state of residence is not Montana, excluding those traveling in commercial vehicles. Nonresident visitors travel in Montana for a multitude of reasons including vacation, visiting friends and relatives, just passing through on route to another destination, business, medical, shopping, or attending a convention. These visitors impact the state and its economy. One of ITRR's roles is to estimate this impact. Three separate but interconnected processes are used to estimate the number of nonresident visitors to Montana, their expenditures, and the economic impact of those expenditures.

## A. Estimating the Number of Nonresident Visitors

The first process is to estimate the number of nonresident visitors to Montana. In 1988, ITRR developed a model for estimating numbers of visitors, and the model has been used since that time. The model is based on the visitor's entry point into the state (because, by definition, every nonresident has to enter Montana somewhere). People enter Montana via highways, airports, and trains. Highway traffic counter data are gathered monthly from the Montana Department of Transportation, the Idaho Transportation Department, the Wyoming Department of Transportation, and the North Dakota Department of Transportation. Canadian border crossing data are gathered semi-annually from the US Customs Service. Airport passenger deboarding data are gathered monthly from the Montana Airport Manager's Association. Due to the relatively small number of people traveling by train, those data are excluded from the model.

Obviously not all people crossing Montana's borders are nonresidents. In order to accurately estimate the number of nonresidents, ITRR conducts resident-nonresident proportion counts at borders and in airports on randomly selected days at randomly selected times. Those proportions are then applied to the highway, airport, and Canadian border crossing data to estimate the number of nonresidents visiting Montana.

## B. Collecting Data from Nonresident Visitors

The second and third processes involve ITRR nonresident travel studies. These studies, conducted every three to five years, involve intercepting nonresident visitors while they are in Montana. ITRR surveyors are stationed at various rest areas, gas stations, Canadian border crossings, and airports. Their goal is to intercept nonresidents in personal vehicles (i.e., not commercial) with out-of-state license plates or in the boarding areas at airports.

A sampling frame for intercepting visitors is developed based on visitor entry points to Montana. Trend data from ITRR's years of estimating visitation (from 1988 to the present) allow for an understanding of where visitors enter the state. For example, by examining highway and proportion count data, it is known that approximately 20 percent of nonresidents enter Montana from I-90 west at the Idaho border during December through March. Consequently, during the winter '97-'98 nonresident study, 20 percent of the surveyors' time was scheduled in Missoula and west on I-90. This is called a stratified random sampling technique and is regarded as a reliable way to design a sampling frame.

When the visitor is intercepted, he/she is asked a series of basic questions:

- Location where he/she entered the state on this trip (identified with a map of Montana)
- Size of travel party/group while on this trip
- Type of travel party/group while on this trip (i.e., alone, as a couple, etc.)
- Home state
- Travel method/primary mode of transportation (i.e., car, RV, motorcycle, etc.)
- Purpose of this trip to Montana
- Whether he/she had visited Montana before
- Number of nights already spent in Montana while on this trip
- Number of nights that will be spent in Montana while on this trip

These intercepted visitors represent the study sample. Because these intercepted visitors are randomly selected, their responses are assumed to be representative of the population of all visitors to Montana.

These visitors are then asked to complete a more detailed mail-back survey. Survey topics include information sources used, travel patterns, and expenditures while in Montana. Approximately 45-50 percent of intercepted visitors return these surveys. Because the nature of the methodology is such that front-end intercept surveyors do not collect name and address information from visitors, it is not possible to conduct a traditional non-response bias check over the phone to see if those who did not return their surveys were different than those who did return their surveys. Instead, data collected at the time of the intercept are compared to data on the returned mail-back surveys. In order to adjust for non-response bias, data from the front-end intercepts are then used to adjust data from the returned surveys where necessary.

Nonresident expenditure data are imported into IMPLAN to estimate economic impacts to Montana's economy (see the "Methods and Data Sources" section below for more information). Estimates of expenditures for the years 1991-1996 were used in this paper (Figure 1). During that time period, the number of visitors to Montana grew from about 7.4 million in 1991 to approximately 8.7 million in 1996.

It is important to remember that ITRR's estimates of nonresident visitation include people who visit Montana for vacation, business, or other reasons, and it is somewhat

problematic to separate those numbers. For example, one change in our society has been an increase in combined business and pleasure trips. Many households now have two working adults, and "vacation time" is at a premium. Some people opt to extend business trips a few extra days and take the family along. As a result, separating a "business trip" from a "vacation trip" is not as clear-cut as it would seem.

For a more in-depth discussion of the model used to estimate nonresident visitation and the

# Figure 1: Nonresident Visitor Expenditures

1996 1,489 1995 1,459 1994 1,400 1993 1,319 1992 1,250 1991 1,107

Note: Expenditures are in millions of dollars. Source: Christensen,

use of IMPLAN to estimate economic impacts, see "Estimates of Economic Impact of Nonresident Travelers to Montana" (ITRR's Research Report 11). For results from the 1996 summer nonresident travel study, see "Nonresident Summer Travelers to Montana: Profiles and Characteristics" (ITRR's Research Report 51), "Nonresident Summer Travelers to Montana: Market Profiles" (ITRR's Research Report 52), "Nonresident Summer Travelers to Montana: Tourism Region Report" (ITRR's Research Report 55), and "Nonresident Comments About Montana, Volumes 1-4" (ITRR's Research Reports 56v1, 56v2, 56v3, 56v4).

## III. Methods and Data Sources

Several sources of data were used in this paper to describe nonresident travel and the Montana economy. This section provides an overview of the data, as well as brief descriptions of the methods used in producing results.

Note that all figures in this document are reported in dollars for the year stated. Therefore, dollar amount differences among years reflect actual changes in spending or other economic measures, as well as increases due to inflation.

## A. The IMPLAN System

IMPLAN (IMpact Analysis for PLANning) is comprised of two components: a database containing information on regional economies (e.g., employment, income) and a economic modeling program that can be used to estimate the impacts of spending or changes in an economy (Minnesota IMPLAN Group, Inc., 1991; Olson and Lindall, 1996). IMPLAN data for Montana for various years were used in conjunction with other sources of data, [such as the Bureau of Economic Analysis' (BEA) Regional Economic Information System (REIS) (Bureau of Economic Analysis, 1997a)], to describe the state's economy and to describe the relative size of nonresident travel impacts in the economy.

An input-output (I-O) model for Montana was created with 1995 IMPLAN data and IMPLAN Pro software to estimate direct employment and income impacts associated with nonresident travel expenditures. <sup>1</sup> It was also used to estimate direct, indirect, and induced impacts associated with a hypothetical change in nonresident travel expenditures. The model was built using Type II multipliers. Type II multipliers are a relatively recent addition to the IMPLAN software system. Earlier versions of the software included only Type III multipliers. The induced effects associated with these two multipliers differ, with the Type II multipliers containing more realistic assumptions about household spending impacts associated with a change in the economy. IMPLAN developers recommend using the Type II multipliers (Olson and Lindall, 1996). (See the next section, "Input-Output Analysis," for additional information about I-O and multipliers. Also, for more explanation about Type II and Type III multipliers in IMPLAN, see Olson and Lindall, 1996.)

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<sup>&</sup>lt;sup>1</sup> 1995 was the most recent IMPLAN database available at the time this paper was written. The 1995 database also contains the most accurate structural data for the economy for the years analyzed in this paper, because it incorporates recent Bureau of Economic Analysis benchmark data for the economy.

## Input-Output Analysis<sup>2</sup>

Input-output (I-O) is a tool used by many researchers for estimating economic linkages and impacts within a regional economy. Within the model, the economic relationships and linkages between industries and other economic players in the economy are represented. Input-output analysis may also be used to demonstrate how a change in any given sector impacts sales, income, and employment in all sectors of the regional economy.

#### 1. Economic Structure and Linkages

The businesses, or economic sectors, of an economy are linked together through their pattern of purchases and sales. For example, a restaurant purchases inputs such as labor, fresh fish, and frozen meats. The meat packing plant then purchases inputs such as beef, which leads to more input purchases by the livestock industry. This chain reaction of input purchases throughout the economy is called a backward linkage. Whenever the restaurant produces (and sells) another meal, there are impacts that ripple through all of the businesses in the backward linkage.

There are also forward linkages from the restaurant to its customers. For example, the restaurant may sell meals to a local caterer who then sells them to convention visitors. If all the forward and backward linkages are traced, it becomes apparent that it is possible for every economic sector to be affected by every other economic sector. In most cases, however, the effect after the first couple of "rounds" of spending becomes quite small.

In each round of spending, there are payments to both businesses and labor. Payments to businesses include a return to capital (profits), and payments to labor include people's takehome pay. Therefore, each round of spending represents an increase in the income of the affected parties. The more of these rounds of spending that can be kept inside the regional economy, the greater the increase in regional income.

While most economic sectors are linked "in theory," in any small economy some sectors are likely to be missing. Therefore, while the restaurant will purchase frozen meats, they will probably be purchased from a business outside of the local area. Most likely this will result from the lack of a frozen foods

processor in the local area. However, it could also result from unique product specifications, or even business customs, which lead to the purchase from a non-local supplier. Regional economies that are relatively small and geographically isolated will have fewer economic linkages than a major metropolitan area. This means that some of the money generated by regional businesses ends up leaking out of the regional economy very quickly. This leakage can be estimated with the help of regional purchase coefficients (RPC's). RPC's are estimates of the percent of local demand for a product that is met by business inside the local area.

#### 2. Impacts and Multipliers

Following the example above, if a tourist from outside the regional economy buys a meal from a regional restaurant, this represents an influx of "new money" into the economy. The immediate impacts of this sale on the restaurant are called the direct effects. For example, the number of employees in the restaurant needed to produce that sale is called the direct employment effect. The amount of restaurant employee compensation and proprietor's income generated from that sale is called the direct income effect.

Notice that the impacts of the restaurant's sale do not stop after the direct effects on the restaurant and its employees. When the restaurant purchases the other inputs needed to meet the requirements of the sale (e.g. fish, meats), there are indirect effects on other businesses. In addition, the wages paid to labor will lead to more purchases of consumer goods (e.g. groceries, vacations). The impact of these household purchases is called the induced effect.

A multiplier is a ratio measure of the total effect throughout the economy of an initial change in one sector. The Type I multiplier is:

M<sub>1</sub> = <u>Direct Effect + Indirect Effects</u> Direct Effect

and the Type II multiplier is:

 $M_{_{\parallel}} = \frac{Direct + Indirect + Induced Effects}{Direct Effect}$ 

Using the restaurant example again, if the initial sale was \$10 and this generated \$8 worth of indirect effects, the Type I output multiplier for the restaurant would be 1.8. This means that for every dollar of sales from the restaurant, 1.8 dollars of sales are generated throughout the regional economy.

<sup>&</sup>lt;sup>2</sup> This section was reprinted from Aldred Cheek et al., 1997.

The direct and indirect effects are depicted in Figure 2. The initial sale and the subsequent local respending rounds are shown in the shaded boxes. Leakage of money out of the local economy is represented by the boxes with dashed borders. The direct sale (\$10) is added to the local respending (\$4, \$2.50, \$1, and \$0.50) for a total of \$18 in direct and indirect impacts. The example in Figure 2 focuses on sales and is fairly straightforward. When comparing among industries with very different input mixes (materials, labor, etc.), it often makes more sense to talk in terms of income and jobs.

Only indirect effects that occur within the regional economy can be counted in the multiplier. So if the economic linkages are weak in a region, and money leaks out to non-local businesses quickly, the multiplier will be lower. In general, larger economies that have more linkages will have higher multipliers than smaller economies. For example, we would expect the multipliers from a single county in Montana to be smaller than the multipliers from the state of Montana.

# 3. I-O Model Limitations and Assumptions

There are a number of limitations arising from the assumptions inherent in I-O models. For example, a fixed, linear production function is assumed within the I-O model. That is, if the production of a good doubles, then the demand for the inputs needed to produce that good will double and there will be no substitution for this input. In addition, the economic relationships captured within the I-O models are static and specific to the particular period when the data were collected. Use of a model in other periods implies that technology is fixed, prices are stable and that there are no structural changes in the economy. This assumption often limits I-O models to the analysis of short run relationships. In many applications, however, I-O models remain extremely useful as tools for estimating the economic relationships within regional economies.

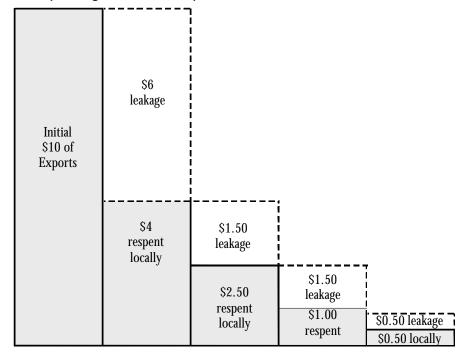


Figure 2: Respending of an Initial Export Increase

Figure 2 adapted from Lewis, Eugene et. al. 1979.

#### B. Montana Economic Data

In order to place nonresident visitors' spending impacts into context, it was necessary to compile figures for the overall Montana economy. As stated above, IMPLAN data were the primary data used to describe Montana's economy. Several major economic components are provided in the IMPLAN database, including employment, employee compensation, proprietor's income, and other property income (Figure 3).

IMPLAN data was available only through 1995. These data were used to compile

# Figure 3: Economic Data Definitions (IMPLAN)

#### **Employment**:

Both full- and part-time workers.

#### **Employee Compensation:**

Wages and salaries, benefits (health and life insurance), retirement contributions, and non-cash income.

#### Proprietor's Income:

Income payments earned by selfemployed persons.

#### Other Property Income:

Rents, royalties, dividends, and corporate profits.

Source: Olson and Lindall, 1996.

the figures presented later in the "Findings" section, which provide a fair amount of detail about several sectors of the economy (Table 7). Where less detail was needed, other sources were used to update 1995 figures to 1996 (for example, this update was done to calculate nonresident travel's share of the whole economy, as shown in the "% of total" column for 1996 in Table 3). Specifically, BEA income data (i.e.,

### A Word of Caution

While exploring economic data and reports, it is very easy to find oneself comparing apples and oranges. There are several pitfalls to be aware of if reading such information.

Data vary from year to year, sometimes dramatically. (For example, according to BEA figures, farm income dropped from \$325 to \$243 million from 1995 to 1996 in Montana.) This means that the year or years of data being analyzed is important to note.

Data labels can be confusing. Sometimes figures referring to two different values share a common name, while in other cases figures referring to identical values can have different names. For example, IMPLAN's personal income equals employee compensation plus proprietor's income, while the Bureau of Economic Analysis' (BEA) personal income also includes transfer payments and dividends. IMPLAN's employee compensation is equal to BEA's wages and salaries plus other labor income. In another example, "Covered" employment figures provided by states' ES202 programs or the Department of Labor are not the same as total employment figures, because they exclude many self-employed and farm workers.

Analysts may aggregate industries in an economy in different ways, sometimes excluding certain industries or bringing industries together in different combinations. Likewise, they may count certain types of income or employment, and exclude others.

All of these realities make comparisons difficult. It is important that readers be aware of what values are actually included in various figures presented by analysts.

<sup>&</sup>lt;sup>3</sup> BEA REIS income and employment data, which is one source of data for the IMPLAN database, was compared to IMPLAN data as a rough accuracy check. The two data sets were similar in terms of distribution of employment and income across the major sectors of the economy.

wages and salary, other labor income, and proprietor's income) were available for 1995 and 1996. This information was used to calculate percentage changes for employee compensation (comprised of wages and salary and other labor income) and for proprietor's income from 1995 to 1996. The percentages were applied to the 1995 IMPLAN totals to update them to 1996. The overall percentage change for personal income (employee compensation plus proprietor's income) was also applied to IMPLAN's 1995 other property income value to update it to 1996. The most recent data available for employment were from the Montana Covered Employment Series (ES202). The percentage change in covered employment from 1995 to 1996 was used to estimate overall changes in employment in the IMPLAN data.

### C. State and Local Taxes

In addition to addressing income and employment, this paper also addresses nonresident travelers' estimated contribution to state and local taxes, including income, property, and various excise taxes. Table 1 displays total state and local taxes collected in Montana from 1991 to 1996. Note that these figures represent taxes collected at the state and local level, not total government revenue (total revenue would include monies from other sources, such as the federal government). Income, corporate, property, and various excise taxes as reported by the Montana Department of Revenue are included. Also included are video gambling taxes (Montana Department of Justice) and fuel taxes (Montana Department of Transportation).

Nonresident visitors "contribute" to state and local taxes in two general ways: (1) directly through payment of excise taxes, such as those on gasoline, and (2) indirectly, by supporting employment in industries that pay corporate taxes and whose workers pay income, property, and other taxes.

### 1. Gasoline and Diesel Taxes

Estimating nonresident travelers' contribution to gasoline and diesel taxes is relatively straightforward, although requires using some assumptions about average prices. Results from ITRR's nonresident travel surveys provide information about how much nonresident travelers spend on gasoline or diesel (Christensen, 1997). Average fuel prices can be estimated to arrive at an approximate number of gallons purchased by nonresident travelers. Then, the state tax rate per gallon can be applied to this figure in order to estimate taxes paid. In the case of both the average price per gallon and state taxes, data on gasoline rather than diesel were used.

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<sup>&</sup>lt;sup>4</sup> "Covered" employment refers to employment covered under Montana's Unemployment Insurance Law. The ES202 series does not include all workers in the state. For example, self-employed persons are not required to report. For more information, see the Department of Labor and Industry's web site: <a href="http://jsd.dli.mt.gov/lmi/202defin.htm">http://jsd.dli.mt.gov/lmi/202defin.htm</a>.

Table 1: Taxes Collected in Montana

Description	1996	1995	1994	1993	1992	1991
Income	383.1	372.1	345.6	357.0	321.5	283.0
Corporation	75.8	75.5	68.9	85.1	57.7	74.3
Natural Resource	60.2	61.8	63.2	68.1	87.7	82.9
Other*	108.2	108.4	96.4	69.6	65.7	41.6
Liquor	19.8	20.2	20.0	21.1	20.5	19.2
Gas, Diesel, Aviation Fuel**	170.5	157.3	159.5	116.3	120.0	110.2
Video Gambling	32.2	31.3	30.1	26.8	24.3	20.6
Property	774.9	739.4	704.1	657.0	588.8	566.6
Totals	1,624.6	1,566.0	1,487.8	1,400.9	1,286.2	1,198.4

Note: Tax figures are in millions of dollars. \*Other includes: old fund liability (or worker's compensation payroll tax), accommodation, cigarette, and other miscellaneous taxes. \*\*Reflects fuel taxes collected minus refunds. Sources: Montana Departments of Revenue, Justice, and Transportation.

The actual proportion of gasoline to diesel purchased by nonresidents is not known, but using gasoline data provided the most conservative estimate of taxes paid. (Using diesel prices, which were typically less than those of gasoline during this period, would have resulted in a larger estimate of gallons bought, and a larger estimated tax payment.) Table 5 in the "Findings" section presents information regarding nonresidents contributions to gasoline and diesel taxes.

#### 2. Other Excise Taxes

Estimating nonresidents' contributions to accommodations taxes is problematic. Results from ITRR's nonresident travel surveys provide information on hotel expenditures. However, applying the accommodations tax rate to this figure results in an amount higher than total accommodations tax collections reported statewide. Given this result, we have concluded that there could problems with accommodations tax reporting and/or within the parameters of our visitor estimation model. ITRR attempted to estimate the proportion of accommodations taxes paid by nonresidents by using a different methodology (asking hoteliers for data on room sales), but found too much variability in room rental pricing and too little participation in the study to be able to generalize the results to the entire industry (McMahon and Nickerson, 1998). Therefore, we know only from a logical standpoint that nonresidents pay less than 100% of the accommodations tax, but we cannot provide a firm estimate of the actual percentage.

The nonresident travel survey data is not detailed enough to estimate figures for other excise taxes, such as those on cigarettes and liquor. For example, travelers report amounts spent on dining, but not the amounts specifically spent on liquor at meals, which would be necessary to know in order to estimate liquor taxes. These other excise taxes make up a small proportion of total state and local taxes (property, income, and gasoline taxes are the largest). While important, their inclusion would not likely have an effect on the overall magnitude of nonresidents' contribution to taxes.

## 3. Property, Income, Corporate, and Other Taxes

Determining nonresident travel's contribution to property, income, corporate, and other taxes (through the support of companies and employees that pay taxes) is a difficult task because this cannot be estimated directly from spending. Instead, simple relationships between taxes and income were used to arrive at an estimate of nonresident travel's contribution to these taxes (Hawaii Department of Business, Economic Development and Tourism, 1996). This method assumes that each industry in the state and employees of those industries contribute to taxes at equivalent rates (with the exception that natural resource taxes were removed from the calculations for nonresident travel, as described below).

Three steps were taken to arrive at these estimates. First, the ratio between taxes and personal income plus other property income was estimated. Natural resource taxes, which are tied directly to the extraction of such commodities as coal, oil, and natural gas, was removed from this calculation. It was assumed that travelers' spending would not directly affect these taxes. Also, the gasoline and diesel taxes paid by nonresidents were subtracted out to avoid double counting. So, for example, total taxes (less natural resource and the nonresident portion of gasoline and diesel taxes) were found to be 8.8 percent of personal income plus other property income in 1996 (Table 2). This figure was calculated by taking \$1,504 million in 1996 taxes (total taxes as shown in Table 1, less natural resource taxes and the nonresident portion of gasoline and diesel taxes) and dividing it by \$17,189 million in estimated total 1996 income (total income as shown in Table 7, updated to 1996 as described in an earlier part of this section). The second step was to determine the income impacts of nonresident travel expenditures. For example, the direct personal income plus other property income impacts of nonresident travel in 1996 were \$599.4 million (Table 3). Finally, the tax percentages outlined above and shown in Table 2 (e.g., 8.8% for 1996) were applied to the nonresident direct income impact values for each year to arrive at estimates of nonresident travel's contributions to taxes through the support of businesses and employment (i.e., 8.8% times \$599.4 million equals approximately \$53 million). These tax estimates are presented in the "Findings" section (Table 6).

Table 2: Taxes as a Percent of Income\*

Measure	1996	1995	1994	1993	1992	1991
Personal income + property income	8.8%	8.7%	8.8%	8.9%	8.5%	7.6%

<sup>\*</sup> Total taxes less natural resource and the nonresident portion of gasoline and diesel taxes used in the calculation for this table. See text for explanation.

## IV. Findings

## A. Income and Employment Impacts of Nonresident Travel

Table 3 shows nonresident travel's "share" of employment and various measures of income in Montana from 1991 to 1996. Percentages are fairly consistent over this time period. Expenditures by nonresident travelers have accounted for about **6 percent of all jobs** in the state during each of the last several years (about **30,800** in 1996).

There are different ways to view income using IMPLAN data. The first way is in terms of employee compensation, or the compensation received by workers from their employers. In 1996, nonresident visitor spending translated to about \$400 million in employee compensation, which was about 4 percent of all employee compensation in Montana. At the same time, nonresident visitor spending generated about \$56 million in proprietor's income, or the income earned by self-employed persons. This translates to approximately 3 percent of total proprietor's income in the state. Overall, travelers' expenditures have generated approximately 4 percent of personal income (employee compensation plus proprietor's income) each of the past several years.

Other property income consists of industries' dividends, interest, rent, and profits. Nonresident travel generated about \$135 million of other property income in 1996, or about 2½ percent of the state total. Combining each of these types of income shows that nonresident travel has provided about 3½ percent of all personal income and industries' property income.

As shown in Table 3, the relative "size" of nonresident travel depends on the measure one is using. It varies from  $2\frac{1}{2}$  percent to  $4\frac{1}{2}$  percent of various measures of income and 6 percent of employment. This variance in relative size reflects the fact that each industry has a different share of jobs and various types of income. Each industry varies in their wage scales and job arrangements (full- vs. part-time, seasonal, etc.), which would influence their share of personal income. Nonresident travel's larger relative share of employment than income reflects the fact that these jobs are either less than full-time or lower-paying on average than jobs in other industries. Also, as the figures for employee compensation and proprietor's income reflect, some industries are more likely to have more self-employed individuals earning proprietor's income, while others have more workers earning employee compensation (see Table 7 for a comparison of these figures with other industries).

Table 3: Direct Impacts of Nonresident Travel, 1991-1996

	199	96	199	95	199	94	199	93	199	92	19	991
Description	Impact	% of total*	Impact	% of total								
Employment	30,809	6.0%	31,078	6.2%	30,665	6.2%	29,634	6.2%	28,932	6.5%	26,386	5.9%
Employee Compensation	407.8	4.1%	400.0	4.2%	385.4	4.3%	367.1	4.3%	353.2	4.7%	314.7	4.7%
Proprietor's Income	56.3	3.1%	55.0	3.0%	53.0	2.7%	50.3	2.6%	48.1	3.2%	42.8	2.6%
Total Personal Income (Compensation+Proprietor's)	464.1	3.9%	455.0	4.0%	438.5	4.0%	417.4	4.0%	401.3	4.4%	357.5	4.3%
Other Property Income	135.3	2.5%	130.9	2.5%	125.4	2.8%	119.3	3.1%	114.8	2.5%	102.9	2.3%
Personal Income + Other Property Income	599.4	3.5%	585.9	3.5%	563.9	3.7%	536.8	3.7%	516.1	3.8%	460.4	3.2%

Note: Income figures are in millions of dollars. \*Percent of total refers to impacts as a percent of total employment or measure of income for the state of Montana. Totals for the state are based on IMPLAN database and updated to 1996 with Bureau of Economic Analysis figures (see text for more explanation).

## B. Impacts of a Decrease in Nonresident Travel Expenditures

Input-output analysis can be used to estimate the impacts from a change in the economy. As an illustrative example, we estimated the impacts that could occur if there was a 15 percent decrease in nonresident travelers' expenditures. Using 1996 expenditures of \$1.489 billion as a starting point, we estimated the impacts from a loss of \$223.35 million (15%) in expenditures (Table 4). The impacts from such a change could mean the direct loss of about 4,600 jobs, \$70 million in personal income, and over \$20 million in other property income. Note that these are direct impacts, and there would also be additional impacts from indirect and induced spending associated with such a change. Accounting for these additional impacts, the total impacts from a 15 percent decrease in nonresident travel expenditures would be the loss of approximately 6,700 jobs, \$113 million in personal income, and \$45 million in other property income.

Table 4: Impacts of a 15% Decrease in Nonresident Travel Expenditures

Measure	Direct	Impacts fron	n Decrease*
	Impacts of Nonresident Travel, 1996	Direct	Total**
Employment	30,809	-4,620	-6,677
Employee Compensation	\$407.8	-\$61.2	-\$95.9
Proprietor's Income	\$56.3	-\$8.4	-\$17.0
Total Personal Income (Compensation + Proprietor's)	\$464.1	-\$69.6	-\$112.9
Other Property Income	\$135.3	-\$20.3	-\$45.4
Personal Income + Other Property Income	\$599.4	-\$89.9	-\$158.3

Note: Income is in millions of dollars. \* Based on 15% decrease from 1996 expenditure levels. \*\* Total impacts include direct, indirect, and induced effects.

## C. Estimated Tax Impacts of Nonresident Travel

Table 5 presents estimates of nonresident travel's contribution to gasoline and diesel taxes for 1991 to 1996. We know from ITRR's nonresident travel surveys that nonresident travelers spent an estimated \$301 million on gasoline in 1996 (Christensen, 1997). Given average fuel prices of \$1.375 per gallon in 1996 (Energy Information Administration, 1997; Montana Department of Transportation), these dollars spent represent about 219 million gallons of gasoline purchased by nonresident travelers. The State of Montana collected \$0.2748 per gallon in taxes (Montana Department of Transportation), meaning that nonresident travelers paid an

**estimated \$60.2 million in gasoline and diesel taxes**, or **35 percent** of total state gasoline and diesel taxes in 1996.

Table 5: Estimates of Taxes Generated by Nonresident Travel: Gasoline and Diesel

	1996	1995	1994	1993	1992	1991
Amount spent on gas or diesel (millions)	\$301.1	\$301.3	\$289.1	\$272.4	\$258.2	\$228.6
Average price per gallon with taxes	\$1.375	\$1.254	\$1.273	\$1.261	\$1.218	\$1.198
Gallons purchased (millions)	219.0	240.3	227.1	216.0	211.9	190.8
State tax per gallon	\$0.2748	\$0.2748	\$0.2748	\$0.2451	\$0.2194	\$0.2055
State taxes paid by nonresident visitors	\$60.2	\$66.0	\$62.4	\$52.9	\$46.5	\$39.2
Percent of total gasoline and diesel taxes	35%	42%	39%	46%	39%	36%
Percent of all state and local taxes*	3.7%	4.1%	3.8%	3.3%	2.9%	2.4%

Note: ITRR's nonresident visitor survey does <u>not</u> include people traveling in commercial trucks or other commercially-marked vehicles. \* Percent of all state and local taxes calculated using figures presented in Table 1. See text in "Methods and Data Sources" section for more explanation. Sources: ITRR nonresident studies (amount spent on fuel), Energy Information Administration (average price per gallon), Montana Department of Transportation (state tax per gallon).

ITRR survey data do not contain enough detailed information to accurately estimate payments to liquor, cigarette, and other excise taxes, but clearly nonresidents contribute to these as well. The amount paid would not be as large as those for gasoline and diesel taxes, simply because the total amounts collected for these other taxes are much less than gasoline and diesel taxes.

As described in the taxes portion of the "Methods and Data Sources" section above, estimating nonresident travelers' contributions to accommodations taxes is problematic. Total accommodations tax collections reported in 1996 were \$9.2 million (about one-half of one percent of all state and local taxes).

The estimates of income, property, corporate, and other taxes paid by companies and employees directly supported by nonresident travel are based on the relationships between taxes and income shown in Table 2 and the estimated direct income impacts of nonresident travel in Table 3. Overall, estimates of nonresident travelers' contributions to state and local taxes through companies and employees supported by nonresident travel range from 2.9 percent to 3.4 percent of total state and local taxes, depending on the year (Table 6).

Compiling the impacts shown in Table 5 (gasoline and diesel) and Table 6 (taxes paid by companies and employees directly supported by nonresident travel) results in a total tax impact from nonresident travel of about **\$113 million**, or **7 percent of** 

**state and local taxes** in 1996. The actual figure, including accommodations and additional excise taxes (e.g., cigarette and alcohol) would be higher than this figure.

Table 6: Estimates of Additional Taxes Generated by Nonresident Travel: Income, Property, Corporate, Excise

	19	96	199	95	199	94	199	93	199	92	199	91
Measure	Tax Impact*	% of taxes**	Tax Impact	% of taxes		% of taxes	Tax Impact	% of taxes	Tax Impact	% of taxes	Tax Impact	% of taxes
Based on personal income and other property income generated by nonresident travel	\$52.5	3.2%	\$51.0	3.3%	\$49.8	3.3%	\$47.5	3.4%	\$43.9	3.4%	\$35.0	2.9%

Note: Taxes are shown in millions of dollars. \* Tax impact calculated applying the "rates" presented in Table 2 to the direct personal income and other property income impacts of nonresident travel in Table 3. These represent the taxes paid by the companies and employees directly supported by nonresident travel. \*\* Percent of taxes is equal to tax impact divided by the total taxes shown in Table 1. See text in the "Methods and Data Sources" section for more explanation.

## D. Employment and Income in All Industries

The industry make-up for the Montana economy (1995) is illustrated in Table 7. Travel is not an "industry" tracked like other sectors of the economy. Activity associated with travel is a part of other sectors, such as services and retail. In this case, based on survey data, ITRR has estimated the impacts of nonresident travel to

the various sectors from which visitors buy goods and services. The total of these impacts has been included as a travel "industry" in the table. At the same time, the impacts have been subtracted out of the various industries affected by visitor spending in order to eliminate double counting and allow for comparisons across all industries, including nonresident travel.

Note that the relative "size" of industries varies according to the measure used (employment or various types of income). Nonresident travel's "share" of

## **Direct Effects**

The nonresident travel figures presented in tables 3, 5, 6, and 7 reflect direct effects of visitors' expenditures. That is, they reflect the initial spending that takes place—the goods and services that are sold, the jobs that are supported, and the income that is generated. After this initial spending, there are other impacts that occur as a result. There are indirect effects, or the additional rounds of spending that occur as providers of goods and services to visitors buy supplies from other industries, and so on. There are also induced effects, or the household spending by people employed in and earning income from the industries affected by visitor spending. These indirect and induced impacts are not included in the tables mentioned above in order to ease comparisons among industries in the state.

the economy varied from 2.5 percent of other property income to 6.2 percent of jobs in 1995. The services (28.1%), retail (16.1%), and state and local government (11.9%) sectors employed over half of the workers in the state. They also accounted for a large share of employee compensation, although their percentages changed

here, with services (22.7%) and retail (10.2%) having lower shares of compensation than employment, and state and local government (16.3%) having a somewhat larger share of compensation than employment. The federal government sector accounts for 10 percent of employee compensation.

The picture looks somewhat different in terms of proprietor's income, with agriculture having 11.9 percent, construction 14.7 percent, and services 37.1 percent. Finance, insurance and real estate stands out at 34.1 percent in terms of other property income, with transportation, communication and utilities (16.5%) and agriculture (10.1%) following. Wood and paper products figures range from 2 percent of employment, to 3 percent of employee compensation, and 4.1 percent of proprietor's income and other property income.

This is a simple description of certain elements of the economy. What it does not show are the interrelationships among industries in the economy. Many sectors rely at least in part on the indirect and induced activity of other industries within the economy or on the spending of non-labor income.<sup>5</sup> For example, some of the activity in the transportation, retail, services, and construction sectors is generated by the indirect and induced activity of other industries, such as agriculture, wood products, and nonresident travel. Likewise, some of the activity in the services, retail, and construction industries is generated by the spending of non-labor income. Other industries, such as mining and many manufacturing sectors, rely heavily on dollars earned through exports. The sale of exports by various Montana industries is a major source of "new money" for the state. Sales of goods and services to nonresidents are analogous to exports for Montana. When nonresidents spend money in Montana, they introduce "new" dollars into the state's economy. So, keep in mind that nonresident travelers' expenditures represents **new dollars for the state**, as do dollars from some other industries, whereas many industries are supported by a combination of new dollars and dollars generated from the secondary spending of new dollars.

One additional note on the nonresident travel figures has to do with business travel. Nonresident travel expenditures include dollars from business travelers who might be visiting the state as part of their dealings with another industry here. <sup>6</sup> Technically, impacts of their travel are "indirect" effects of those other industries. For example, if a sales person visited the state in order to communicate with a wood products client, his or her spending came about as a result of activity in the wood products industry.

Non-labor income includes transfer payments (retirement, disability, medical, income maintenance, unemployment, veterans, and other distributions) and personal dividends, interest, and rent.

As noted in an earlier section, ITRR's nonresident visitor survey does <u>not</u> include people traveling in commercial trucks or other commercially-marked vehicles. It does include business people who are traveling in private vehicles or by air.

On the other hand, out-of-state business travelers might choose to hold meetings or conventions in Montana because of the state's location or amenities, in which case their spending would simply be considered direct impacts of nonresident travel. Many travelers also make "combination" trips, where they spend some time in Montana on business and some on vacation. In the summer months, when Montana experiences almost two-thirds of its nonresident visitation, it is estimated that only six percent of visitors are here primarily on business (Parrish et. al., 1997). Overall, the majority of nonresident travelers included in the figures presented here are pleasure travelers, and their spending is considered an "export" for the nonresident travel "industry."

Table 7: Montana Economy, 1995

Industry*	Employ	ment	Emplo Compens		Proprie Incor	tor's	Personal (Compen + Propri Incon	sation etor's	Other Pro		Personal Other P Inco	roperty
Agriculture	26,872	5.4%	142.2	1.5%	216.2	11.9%	358.4	3.2%	520.1	10.1%	878.6	5.3%
Forest Products	741	0.1%	5.5	0.1%	3.4	0.2%	8.8	0.1%	24.2	0.5%	33.0	0.2%
Ag, Forestry, Fishery, & Landscape Services	3,924	0.8%	23.2	0.2%	29.2	1.6%	52.4	0.5%	6.5	0.1%	58.9	0.4%
Mining	6,149	1.2%	260.8	2.7%	23.7	1.3%	284.5	2.5%	246.1	4.8%	530.6	3.2%
Construction	33,798	6.7%	610.1	6.4%	266.1	14.7%	876.3	7.7%	82.6	1.6%	958.9	5.8%
Wood & Paper Products Manufacturing	9,791	2.0%	285.7	3.0%	74.3	4.1%	360.0	3.2%	213.0	4.1%	573.0	3.5%
Petroleum Refineries	659	0.1%	48.5	0.5%	2.0	0.1%	50.5	0.4%	76.1	1.5%	126.6	0.8%
Other Manufacturing	14,473	2.9%	371.3	3.9%	27.3	1.5%	398.5	3.5%	133.8	2.6%	532.4	3.2%
Transportation, Communication, & Utilities	22,785	4.5%	751.0	7.9%	144.2	8.0%	895.2	7.9%	854.1	16.5%	1,749.3	10.6%
Wholesale Trade	18,875	3.8%	527.1	5.5%	41.9	2.3%	569.0	5.0%	156.1	3.0%	725.1	4.4%
Retail	80,512	16.1%	973.0	10.2%	188.7	10.4%	1,161.7	10.2%	247.1	4.8%	1,408.7	8.5%
Finance, Insurance & Real Estate	27,608	5.5%	456.6	4.8%	67.2	3.7%	523.8	4.6%	1,758.4	34.1%	2,282.2	13.8%
Services	141,129	28.1%	2,168.4	22.7%	672.7	37.1%	2,841.0	25.0%	242.6	4.7%	3,083.6	18.7%
Federal Government	23,703	4.7%	957.2	10.0%	0.0	0.0%	957.2	8.4%	285.5	5.5%	1,242.7	7.5%
State and Local Government	59,474	11.9%	1,551.7	16.3%	0.0	0.0%	1,551.7	13.7%	184.6	3.6%	1,736.3	10.5%
Nonresident Travel**	31,078	6.2%	400.0	4.2%	55.0	3.0%	455.0	4.0%	130.9	2.5%	585.9	3.5%
Totals	501,571	100%	9,532	100%	1,812	100%	11,344	100%	5,162	100%	16,506	100%

Note: Income figures are in millions of dollars. \*Order of industries follows order of the Standard Industrial Classification system (SIC) (which IMPLAN and BEA data also follow), with nonresident travel included at the end. \*\*Nonresident travel figures are ITRR estimates based on expenditures. Travel is not an "industry" tracked like other industries. Activity associated with travel is part of other sectors, such as services and retail. In this case, ITRR has estimated the impacts of nonresident travel to various sectors, subtracted those impacts from the affected industries, and shown the total for nonresident travel here in context with other industries. For a key to the IMPLAN industries included in each category, see Table A1 in the Appendix.

## More Perspectives on the Economy

Another approach to examining the composition of the state's economy is to look only at "basic" industries, or industries that produce goods or services that are exported and bring dollars into the economy. Income from basic industries are said to support the other industries. For example, the Bureau of Business and Economic Research (BBER) at The University of Montana reports labor income for basic industries in Montana based on BEA REIS data, ITRR nonresident expenditure estimates, and an estimate of income generated by nonresident expenditures. See Table 8 for 1996 figures. These data are shown to give readers information about another way that economic data can be presented and has been presented for Montana.

Portions of other industries such as service or finance, insurance, and real estate could be serving non-local clients, which are not reflected in Table 8. To truly include all "basic" income, one would have to include such things as university income that is generated through the acquisition of out-of-state grant dollars.

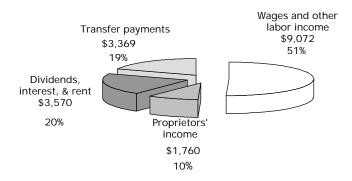
Table 8: Basic Labor Income, 1996

Industry	Basic Labor Income	% of Basic Income
Agriculture	\$246	9.0%
Mining	\$290	10.7%
Selected manufacturing*	\$328	12.1%
Wood & paper products**	\$332	12.2%
Transportation***	\$414	15.2%
Nonresident travel	\$420	15.4%
Federal government (including military)	\$690	25.4%
Total	\$2,720	100%

Note: Income in millions of dollars. \*Manufacturing industries excluding wood and paper (included elsewhere in table) and stone, clay and glass, printing and publishing, and food products (assumed to be consumed locally). \*\*Forestry services, lumber and wood products, paper and allied products. \*\*\*Railroad and trucking and warehousing sectors. Source: Bureau of Business and Economic Research, 1998.

Also, the above table does not include non-labor income, such as transfer payments or dividends. In some cases, retirement or dividend dollars are being earned through out-of-state sources, and represent "new" dollars for the state. Figure 4 illustrates the major components of income in the state. As this shows, non-labor income sources are substantial. Montanans collected about \$7 billion in dividends, interest, rent, and transfer payments in 1996. However, non-labor dollars may have been generated within the state and would therefore be considered "secondary." For example, Montanans contributed to social security and paid other taxes that came back as transfer payments, making the net return to Montana non-labor income smaller than the total reported in Figure 3. All of this makes comparisons among the different types of data difficult, but it is important to be aware of various ways to describe the economy.

Figure 4: Components of Personal Income in Montana, 1996



Note: Income is in millions of dollars. Source: Bureau of Economic Analysis, 1997b.

## V. Conclusions

Nonresident travelers' spending contributes to many sectors of the state's economy and **adds diversity to the economy**. Diversity is needed for a healthy economy—it helps an economy weather changes. Overall, the figures for nonresident travel in the context of all sectors of the economy show that **nonresident travel is an important part of state's economy**, on par with agriculture in terms of jobs and wood and paper products in terms of total income. Also, the estimated tax figures presented here suggest **nonresident travel contributes substantially to state and local taxes**, generating a share of taxes disproportionately larger than its share of income or employment.

Also, keep in mind that there are interactions among industries in an economy. Changes in one industry can result in changes in another. In some cases, it may be that the presence of nonresident travelers' expenditures combined with the activities of other industries in an area work together to provide a critical mass of support to maintain services and other businesses in an area, **helping to keep money in the state economy longer**.

There is no single answer to questions about the size of industries in an economy. In order to account for the relationships among industries and to make more complete comparisons among all industries in the state, one would have to pursue additional analyses. These analyses might carefully consider exports, look at the purchasing patterns of industries (e.g., to what extent each industry is using local inputs, keeping dollars in the local economy), and explore all sources of income. They might also address the costs of industries in the state, or the social aspects of industries. Interested readers would serve themselves well to explore different sources of data and different approaches to answering these questions.

What this paper presented was information about the relative role of nonresident travel dollars in Montana's economy. It is an estimate of what role nonresident travel presently plays in the state's economy, not a comment on what it should be or will be. It was not intended to fuel animosity among industries as they try to demonstrate their importance relative to other industries in the state. It is our hope that that this paper will add to the data available that informs discussions about the roles, importance, and futures of *all* components of the state's economy. Many components of the economy are interdependent, and each have contributed something to its well-being.

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# VII. Appendix

Table A1: Key to 1995 IMPLAN Data Table

Description	IMPLAN Industries
Agriculture	1-21, 23, 25
Forest Products	22, 24
Ag, Forestry, Fishery, and Landscape Services	26-27
Mining	28-47, 57
Construction	48-56
Wood and Paper Products Manufacturing	133-147, 161-173
Petroleum Refineries	210
Other Manufacturing	all manufacturing sectors, minus wood & paper, petroleum refineries
Transportation, Communication, & Utilities	433-446
Wholesale Trade	447
Retail	448-455
Finance, Insurance, and Real Estate	456-462
Services	463-509, 525
Federal Government	513-515, 519-520
State & Local Government	510-512, 522-523

Note: Forest products refers to the growing of trees. Retail includes grocery, auto, dining, and merchandise retailers. Services include personal, business, health, education, engineering, accounting, social, and management consulting services.

These categories generally follow Standard Industrial Classifications (SIC), although wood and paper products, oil refineries, and forest products have been broken out for illustrative purposes.